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THE
RICHES
OF A
HOP-GARDEN
EXPLAIN'D;

From the several Improvements arising by
that Beneficial PLANT: As well to the
private Cultivators of it, as to the Publick.

With the Observations and Remarks of the most
celebrated Hop-Planters in *Britain*.

Wherein such Rules are laid down for the Management
of the HOP, as may improve the most barren Ground,
from one Shilling to thirty or forty Pounds an Acre
per Annum.

In which is particularly set forth, the whole Culture
from the first breaking up of the Ground, the Plant-
ing, &c. to the Kilning, or Drying of the HOP.
Rendered familiar to every Capacity.

By *R. BRADLEY*, Professor of Botany
in the University of *Cambridge*, and F. R. S.

LONDON:

a. 3580.

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and THOMAS GREEN at *Charing-Cross*.

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THE RICHES OF A

FOUR-GAR DEN
EXPLAINED



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TO
HIS GRACE
THE
Duke of Beaufort,

May it please YOUR GRACE,

THE Honours I have
enjoy'd, in the Ac-
quaintance of many
of your Illustrious Family,
which has given me Oppor-
tunity of observing, with
A 2 the

iv DEDICATION.

the utmost Pleasure, Your *Grace's* early Curiosity, and Brilliant Genius, would make me inexcusable, if I should neglect the first Opportunity of congratulating my Country upon your Arrival, at the full Possession of your Powers.

Our *English* History, my Lord, shines with the Noble Characters of Your Ancestors, who have always distinguished themselves in supporting the Honour of the *British* Diadem; and maintaining the Liberties of the People.

Nor

DEDICATION. iv

Nor is it less redounding to the Glory of *Your Grace's* Predecessors, that they have always been esteem'd for having a just Regard to the establish'd Church, as well as for their prudent Oeconomy, and generous Disposition.

Her Grace *Mary Duchess of Beaufort*, so much celebrated throughout *Europe* for promoting Natural Learning, and for possessing a most uncommon and admirable Share of Knowledge, has made her Character everlasting. It

vi **DEDICATION.**

It was, *my Lord*, to *HER* penetrating Judgment, and discerning Curiosity, that we owe the first *Paradise* in *England*, *YOUR* delightful *Badminton*, where, by the polite Genius of that *Great Lady*, the most curious Plants from all Quarters of the Earth were assembled, and willingly paid their Obedience to *Her Dictates*.

To the benign Influence of *Her Grace's* happy Genius, to promote the curious and useful Study of planting, all the Gardens in *Britain* of

DEDICATION. vii

of the best Disposition: are
owing.

And as your Grace is
now possessed of the de-
lightful Seats, and harmo-
nious Dispositions of Your
Ancestors, we may expect
all the Improvements from
You which may serve as
Examples to the whole
World.

The Treatise which I
now lay before Your Lord-
ship, concerning the Im-
provement of Land by
Hops, will, I hope, meet
with Your favourable Re-
ception,

viii **DEDICATION.**

ception, especially since my
Botanical Labours have ta-
ken their Rise from a Prin-
cipal so illustrious as the
Great Duchess of Beaufort.

I am,

My Lord,

with the greatest Respect,

Your Grace's

most obedient,

and most devoted,

humble Servant,

R. BRADLEY.

INTRODUCTION

TO THE Management of a HOP-GARDEN.

THERE is nothing engages me to publish a Treatise of this kind so much as the Opportunity I have of enquiring into some particular Remarks of my Correspondents in the Hop-way, and the curious Memorandums I have lately had occasion to look over concerning the Improvement of Ground by Hops, which are so good, and may prove so useful to the Publick, that I should think it a Crime in me to let such useful Discoveries lie unimproved, or suffer them to mold in the Chamber.

Many a fair Manuscript, as well as its judicious Compiler, has been lost to the World, either from Neglect, or from a covetous Zeal in the Discoverer.

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Some

Some who have been at the Trouble of making their Remarks, with an Intent of serving the Publick, have either died, or changed their Fortunes, before they had compleated their Schemes; or otherwise have been so proud, or so much raised by the Curiosity of their Observations, that they have held them sacred, and thought them unworthy the ungrateful World, as I have had some Instances.

But to set the last Part by unregarded, we have another sort, which are knowing, and expect Mints of Money to tumble into their Laps for *a little Secret*, and rather than divulge what they know without a large Premium, will die with their Knowledge.

Some of these, however, are so kind to themselves that they will now and then, upon grand Discoveries, make Pocket Memorandums, and when we lose the Man, we then begin to discover his Worth. This is like the Miser, who is never so poor as when he is rich; nor does the World enjoy any Benefit from him till he has nothing to give.

But

But I may mention a set of Men who are of the contrary Temper, and somewhat, perhaps, like the first whom I have mentioned, *viz.*

Those who love to make their Observations regularly, and are too modest to offer them to publick View, even tho' they have brought them to the highest pitch of Perfection they were capable of.

So that through Covetousness, ill Nature, vain Conceit, and Modesty, half the Knowledge of the World is lost to the Publick.

I mean such Knowledge as cannot prove of very extraordinary Advantage to the Discoverer, and by being communicated might be of Service to thousands.

If a man indeed has a Secret that he can live by, or proves a Principle in advancing his Fortune, let him keep it to himself, unless he meets a good Purchaser, or gives it to some Friend when he dies; but it is barbarous, it is inhumane to die with a Secret that might be publickly useful.

Therefore I advise every Sort of Men to keep Memorandums of their several Improvements which are, or may be advantageous to the Publick, that the World may not lose any Branch of the Benefits now existing in it, but especially to publish them when they are living, if possible. Because, however clear and plain a Book may be written, some or other will desire to consult the Author more immediately on the Case delivered in writing.

But it is time to leave this kind of Argument, to come more immediately to the Purpose of planting the Hop, which considering the small Space of Ground it takes up, in comparison to other Plants, and small Expence of planting, the prodigious Profit to the Proportion, and the great Advantage it brings to the Crown of *Great Britain*, is well worth our Consideration.

These severally should be thought on, as some of my Memorandumists have hinted; from whence likewise it will appear, that they had no less regard for Soil, Situ-

Situation, Pruning, Watering, and every other thing to be done towards the bringing of good Hops to the Market.

As my Papers, which I have collected relating to this Plant, are extraordinary in their way, so I have taken no small Pains to place them in the best Order they would admit of; withal adding my own Observations, where I found it necessary, to fill up the Chasms that might otherwise have been found by the Hop-planter in a Work that he ought to think should be compleat, as I have now endeavour'd to make it.

I cannot conclude this Introduction without observing, that I have been extremely beholden to many of the Gentlemen in *Surry*, as well as those of *Kent*, and other Hop-Countries, for their Remarks relating to the Improvements of Hops, which most of them judge is one of the most beneficial Plants that can be set upon any Ground.

For even Ground that was never before esteemed worth a Shilling an Acre *per Annum*, is rendered worth forty, fifty,

ty, or sometimes more, Pounds a Year,
by planting Hops judiciously upon it;
which is the great Motive that induces
me to give a Work of this Nature to
the Publick.



ARTICLE
For every Acre of Ground that was never be-
fore esteemed worth a Shilling an Acre
for any other use, is rendered worth forty, fifty,

ARTICLE I.

WHEN a Hop Garden is to be laid out, the three following Particulars should be considered, *viz.*

First, Whether you have or can procure any Ground which is fit for the purpose.

Secondly, Whether such Ground is well situated.

Thirdly, The quantity of the Ground, that one may the better guess how much it will produce.

If the Ground we design for a Hop Garden be not your own Inheritance, take it to your self upon a long Lease, lest another Man reap the Fruits of your Industry and Expence.

Memo-

Memorandums of the Ancients, &c. Concerning the Aptness of Ground for Vegetation, with some particular Examples relating to the Improvements of the Moderns, by Culture and Manures.

It is a receiv'd Opinion, that Earth which is salt, and of bitter Taste, is neither good nor apt to be reconcil'd by Manure. *Hesiod* and *Virgil* favour that Doctrine, and seem to enforce it. But I find by Experience, that there is no Soil whatever but may be rendred tractable, and become profitable to the Owner with good Management.

I shall not however repeat what I have said before, in many of my Works, concerning stubborn or unferile Grounds; but in general remind my Reader that to rectify Clay use Sand, and to meliorate Sand use Clay.

Since the Volumes I have formerly publish'd, I have practis'd this Method,

and have improv'd many Grounds by it, greatly to the Advantage of the Proprietors, even to increase their Estates to more than twice the Value.

But let us inquire a little further into the Opinions of the Ancients. *Didymus* and *Solinus* tell us, that such Earth as is white or chaulky, or all Sand without a mixture of perfect Earth, or a Clay which will gape or crack in hot Weather, such Earths they do not allow to be fit for any Plant.

When I consider their Sentiments of the Matter, I need only refer to what I have said before to some of my Readers; but to others, who may want a further Explanation of my Meaning, Chalks may be mended by sharp Sand, or moory or heathy Ground; and Clay may be mended in the same Manner with Sand of the most barren Kind, and such Sand may be also improv'd by soft Chalk or Clay, or any other Soil which carries earthy Particles, and has a viscous Quality in it.

If Earth happens to be brought into

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good

good Order by any of these Means, it may yet lie too dry or too wet : For Lands after the best Manure, if they are subject to Land-waters, or Springs, will yield no Profit ; therefore all Opportunities should be taken for draining any Grounds that are annoyed by Waters, before we begin to sow or plant any thing upon them.

If the Grounds are subject to Waters, hollow ditching is a certain Remedy, as is now used in *Hertfordshire, Essex,* and the Counties adjacent.

An old Writer, when he speaks with regard to the Goodness of Earth, tells us, that when a large Clod of Earth cleaves to your Fingers like Wax, or is clammy or slippery after it is opened by Water, that Earth is deem'd a profitable Land.

By this I suppose he means such Ground as generally carries with it a viscous Quality, such as all Clays and Chalks do ; this sort of Earth the Farmers tell us has a Fatness in it ; but a Writer of a hundred and fifty Years stand.

standing, gives us his Sentiments of these things in the following Words, *viz.*

“ I for my part rely not on other
 “ Mens Opinions, neither mean to dis-
 “ pute with any Man, I like not to
 “ make my Mouth an Arbiter in this
 “ Matter, my Eye may be deceived, and
 “ my Feeling may err in the precise Di-
 “ stinction of good or bad Land; but
 “ my Experience hath never fail’d in
 “ this, *i. e.* that a barren, moory or
 “ wet Soil, tho’ they severally will pro-
 “ duce a wild Hop, will never bring a
 “ profitable Hop to the Market.

It is certain that a moory or wet Soil will not produce good Hops without Culture, but Soils of these sorts, that have been amended by draining, and assisted by others of contrary Natures, bring the best Hops in *England*; and subsist to the Profit of their Proprietors with little Repair.

At *Farnham*, the first capital Town for Hops in *Britain*, the Soil is generally sandy; but by Improvement, such as I have mentioned above, that benefi-

cial Branch of Husbandry has rais'd great Fortunes to many Families, inso-much that within a few Years the Town is almost rebuilt in a most elegant Manner.

There are near this Town many new Hop-Gardens erected on a moorish Ground near a River-side, in the Way leading to *Moor-Park*, which by the good Management of the Owners have turned to good Account ; for the Hills, which we shall talk of by and by, are judiciously manured and prepared according to Art.

About *Winchester* and *Alton* on the hilly Grounds we find some Hop-Gardens which bring in no small Profits to their Owners, so that between both the high and low Grounds, it is hard to judge which Lands are most advantageous.

An Hop, generally speaking, seems inclinable to prosper on dry Ground, as we have many instances from its familiar Growth on the sides of dry Banks, and near Hedges : And as for the *wild Hop* I know no such thing ; for I have
often

often dried out of common Hedges as good as ever I received from the Gardens. It is therefore reasonable to judge, that Hills in our Hop-Gardens are necessary, especially in moist Lands; for if there should come a wet Season, and the Hop should be planted in low Grounds subject to Waters, without Hills, the Hop-Roots would be apt to suffer by Inundations; therefore in low Lands the Hills ought to be much higher than in mountainous or hilly Grounds, as the Hop Hills should be smaller and lower in high Grounds.

And this must be particularly considered, when we prepare our Soil for the Hop. When we have a light Ground below, we may have a stronger or more heavy Earth in the Up-lands, because as these may by chance want Rain, or the Assistance of Water in the Summer, the stiffer Earth will hold Moisture longer than the light Soil; and on the contrary those Lands which ly low, and are incumbred by an over-flux of Waters, require a light Soil in their Preparation,

paration, that they may easily discharge the great Moisture which may accidentally or suddenly fall upon them: But more of this hereafter.

But as we are upon Soils proper for Vegetation, I cannot help taking notice, that *Columella* observes, the richest Ground is where Crabs and Sloes grow; and another Author observes, that the Richness of any Earth may be perceived, by digging a Hole in the Ground, and filling it up again with the same Earth that was taken from it: It is his Remark, that if the Earth that was put in swelleth, the Ground is of a good Strength, and the most proper for Vegetation; but if in some time it declines and shrinks, it is an ungenerous Soil.

However this may be in Fact, I shall not pretend to determine, but I may venture to give my Opinion, that all new broken Earth, as it is more or less fertile by imbibing, the Moisture of the Air will swell more or less, as it is more or less spongy; and whatever Earth is in such a State, as to receive a large

large Quantity of Matter from the Air, and can the longest hold it, is the best; for which reason I neither recommend Sand nor Clay, but a Medium between both, the sandy part to receive, and the clayey part to retain.

So in dry and wet Weather, every Ground so prepar'd will avoid the Inconvenience of being oversoaked with Waters, or want Showers too suddenly.

A Passage which I have met with amongst my Manuscripts, on the framing of Hop-Ground, " intimates, that a " dry Ground, if it be rich, mellow and " gentle, serves best for that purpose, " and such Mould should either be sought " for, or else by Cost and Labour be " provoked.

It is necessary however, to choose a Soil deep enough to hold your Poles fast and steady, for the blowing down of the Poles when the Hops have twin'd about them, will create a Disorder in your Hop-Garden not to be remedied, and the Owner must consequently lose a great part of his Expectations.

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It is notorious that all Hop-Gardens should be secured as much as possible from high Winds, that the Poles upon every Hill may stand secure and firm, to resist the most turbulent Weather; for if the Poles should happen to be blown down while the Hop is growing, the Weight of the Hops will be much less than if they had not been interrupted; so it is said likewise, that the stronger we can allow our Ground to be, (considering the above Rules,) so much will our Hops prove in Weight.

ARTICLE II.

Of the Situation of a Hop-Garden.

WITH regard to the Situation of an Hop-Garden, we must provide such Ground as may ly open to the Sun either the whole Day, or the greatest and warmest Part of it, rather inclining to the East than to the West, for the Morning Sun, will contribute to

take off the cold Dews early from the young Sprouts or Jerms of the Hops when they first appear in the Spring, and will be of no less Consequence when the Hop is in Blossom, and tending to Ripeness.

At the time indeed when the Hop is about ripening, one would choose if possible a full day's Sun, from Rising to Setting, to bring the Hop to the Kiln; for they dry more easily, and to more Advantage, than when they have wanted Sun at the end of the Season.

It is also necessary to provide such a Garden for them, as may be well sheltered, from the Violence and Contragion of Winds; such rather as is naturally defended by Hills than by Woods, or artificially protected by Plantations of Trees; however if we are forc'd to the latter, let not your Hops be planted too near the Trees, lest they shadow your Hops, or drop upon them.

When I have gone thus far in my Account of Situation, I must remark by the by that some Hop-planters, out of

too great a Desire of exposing their Gardens to the Sun, have been great Sufferers: The South, as well as the East and West, have been intirely open, without either the Defence of Hills and Woods; by which neglect the sharp easterly Winds of the Spring, have blasted the Hop in the Bud; and in the latter part of the Season, the Storms from the West and South-West, when the Poles are laden with Hops, disturb and bruise the Crop.

Amongst my Memorandums I find one Gentleman, who advises that a Hop-garden should be plac'd near your House; and tells us, "That by such Means, we may be able to warrant the Fruit of it, from such Fingers as put no Difference betwixt their own and other Mens Goods:" But he liv'd many Years ago, when I suppose Hops were pretty scarce; or I hope there were more Thieves than are in our Times.

We have however, in our Age, so much Faith, as to trust our Hop-gardens in Places remote from Towns, provided they have such Shelter as I have mention'd;

tion'd; and there are some Instances in *Kent*, of Hop-gardens that ly fully exposed to Wind and Weather; what is particularly remarkable in them, is, that if the Spring is favourable, the Crop will appear gay till the latter Season; and then if the western Storms happen, we find perhaps five or six Rows on the West-side are Sufferers, and defend the rest from Injury; and yet notwithstanding, have tolerable Crops for the most part.

But to return to the Remarks of an old Gentleman I have already instanc'd, he observes that the Garden being plac'd near the House, there will admit of a more immediate Recourse to it, than if it was to lie at a Distance; for as the Hop requires a pretty close Attendance, while it is in its Shoot, the Servant as well as the Master's Eye, may always be upon it, as well to set to Rights any disordered Pole, to bind or regulate any disordered Vine, or to water such Hills as may have occasion for Moisture: It is a Proverb, *the Master's Eye makes the Horse Fat.*

A Hop-garden likewise, as one of my Memorandumists remarks, should be near the House, because as he will have it, Dung may easily be brought upon the Ground, or such Manure as is generally made in a Farm-yard; and to be sure it is necessary to avoid the Expence of Carriage in this, as well as in other Branches of Farming.

Some have particularly remark'd, that to expose it too openly to the South, makes the Garden subject to Mildews, in the blossoming Season; but where Hills or other Shelter, at a proper Distance, defend your Hops from Winds, without preventing the Sun, you may be sure of good Hops, and it certainly preserves them from the Fly, especially if no Dung is used in the Hills.

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ARTICLE III.

Of the Proportion of a Hop-Garden.

I find in my Papers the following Paragraph, relating to the Quantity of Ground for a Hop-garden, or a Hop-yard, as commonly called in *Surry*, viz.

The Quantity of your Garden must either be measured by the Proportion of your yearly Expence of Hops in your own House, or by the Charge you design to bestow in the preparing and keeping of it; or else that it may be no larger than that the Hands you can spare may have their Employment in it, so that it may want no help; or otherwise it must be proportioned according to the Market Advantage or Gain you propose to receive from it.

An old Writer, in a merry way, speaking on this Occasion, tells us, " That
 " the Profit and Gains arising by a Hop-
 " Garden sometimes so pleaseth and flat-
 " tereth a covetous Man's Conceit, whose
 " Vein or Humour is such that he will
 " employ

“ imploy more Ground than he can keep
 “ or maintain, and through the Greedi-
 “ nefs of his Desire overthrow his whole
 “ Purpose.”

But however we may have laid down
 general Rules, the following Particulars
 are given us by a Person seemingly of
 good Judgment.

One Man may keep two thousand Hills,
 and yet reserve his Winter's Labour for
 any other Purpose.

Upon every Acre, as it is more on the
 side of a Hill, or on a Plain, may be rais-
 ed seven, eight, or nine hundred Hills,
 as will be more particularly explained in
 the Sequel.

Every one of these Hills will bring well
 ordered three, or perhaps four Pounds of
 Hops.

One of my Papers tell me that two
 Pounds and a half of good Hops will
 serve for brewing of one Quarter of Malt,
 (but this was wrote in the Year 1380.)
 Others however use their Pleasure in hop-
 ping their Liquors, as they design them
 for longer or shorter keeping, as will be
 explained more fully hereafter. Hops

Hops have been sold according to the several Seasons they were gathered in. Within the last ten Years from thirty Shillings to four Pounds and upwards an hundred Weight: For we have sometimes wet gathering Seasons when the Hop is come to the greatest Perfection of Ripeness.

We have also Blasts or Blights, and sometimes Mildews, which often disturb the Repose of the Hop-planter, and reduce his Expectations to half his Prospect.

So is it, that in a good Year when there is plenty of Hops, well gathered, the Markets may be over-stocked, or else the former Years having produced poor Crops, the bad have been first sold off, or mixt with the good, and the Price kept at a low Rate, till the Ingrossers had amassed their Stock in order to distribute from their Magazines Hops at their own Prices, from whence we may judge if Hops have had a bad Season they cannot be good, therefore must be cheap.

If they have had a good Season they are in plenty, and are generally brought to Market in great Quantity, and therefore
cannot

cannot sell there at a very dear Rate.

And the Factors that take their Advantage on both sides the Question, have sometimes a lucky hit, but must be always Gainers.

It is however certain, that the Hop-planter, when his Garden is once in order, cannot be a Loser; but must necessarily be a Gainer, even beyond any other way that he could imploy his Ground, perhaps twice or thrice as much.

At the first Time, when Hops were planted with us, they were sold at 1 *l.* 6 *s.* *per* hundred, as it is observed in one of my Memorandums, of early Date; and it is also remarked by the same curious Observer, that one Acre of Ground cultivated for Hops, reckoning also one third Part of a Man's Labour, shall bring to the Owner clear Profit about 30 *l.* yearly for a long Season; but I have known Hop-Grounds that have cleared above 50 *l.* yearly *per* Acre, to be sold at the first hand.

One Reason why Wild-hops are so much taken notice of is because in many
Gardens

Gardens that are neglected, and want good ordering, the Hops have been small and of an indifferent Colour, and these have commonly been judged to have been of a wild Kind, or as the Hop-planters call them Run-a-ways. It is so in most sorts of Fruits, when a Plant has worn itself out by standing too long on the same Ground without sufficient Culture, it will degenerate, or as the Gardners term it, *run wild*. It is observable, by one of my Papers, seemingly written by a Person of good Judgment, that Ground well disciplined and discretely managed will not only yield more, but larger, firmer, and more weighty Hops; and these Weight for Weight will go further in Brewing than the small ones. They will also last much longer than a small Hop, and will be much more pleasant to the Palate.

While I am upon this Head, give me leave to make a Remark written about a hundred Years ago, concerning the Use of the Hop in brewing; my Author says, that whereas you cannot make above eight Gallons of indifferent Ale

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out of one Bushel of Malt, one may draw about eighteen Gallons of good Table Beer : Neither is the Hop more profitable to enlarge the Quantity of your Drink than necessary, to prolong the Continuance of it. He further adds, That if your Ale may indure a Fortnight, your Beer, thro' the Benefit of the Hop, will continue a Month, what Grace it yielded to the Taste, (to use his own Words) all Men may judge, that have Sense in their Mouths : And if the Controversy be betwixt Beer and Ale, which of them shall have the Place of Pre-eminence, it suffices for the Glory and Commendation of the Beer ; that hercin our own Country Ale giveth place unto it ; and that most part of our Countrymen doth abhor and abandon Ale, as a loathsome Drink ; whereas in other Nations Beer is of great Estimation, and is by Strangers preferred as the most choice and delicate Drink. Finally, that Ale that is most delicate, and of the best account borroweth the Hop, without which it wanteth its chief Grace, and best Vertue.

dure. *He continues,* these things considered, you may proceed to the making of your Garden, &c.

It would be expected of me in this Place to say something of the Use of the Hop, more particularly, with regard to brewing; but I shall defer that till the End of this Treatise. However for the present I cannot help observing, that the Hop not only contributes to the good keeping of Malt-Liquors, but adds considerably to their Strength.

One of my Memorandumists gives us, in the following Words, some Rules that are not unworthy of Consideration, with regard to the laying out of a Hop-Garden, *viz.*

When you proceed to make your Garden, you are to have Counsel for the laying out thereof.

Secondly, For the due Season and the right *Trade* to cut and set Hop-roots.

Thirdly, What Choice you shall make of them.

Fourthly, What Charge you shall be at for them.

And when you have considered these things, you are yet to learn the time when, and the way how to prepare your Ground, and to make it able to entertain and nourish them.

You must also know how to frame your Hills to maintain them, and to pull them down as well as to cut and fashion them.

Likewise you must be acquainted with the Manner of erecting and pulling up, as well as preserving your Poles, and to gather, to dry and pack your Hops.

Finally, (my Author observes) you must be taught the Reformation of many Enormities and Abuses that are received in many Places for good Rules.

We find by Experience that what has been observed above, must be necessarily right, for without every Article is considered an Hop-Garden can never be profitable.

Let us now therefore proceed to examine my Papers, as well as my Experience, concerning the Preparation of a Hop-Garden.

ARTICLE IV.

ONE of my Papers gives the following Account of preparing a Hop-Garden, *viz.*

Dispose the Ground which you determine to lay out this Way, in as level, uniform and square a Manner as you can conveniently.

If your Ground is Grass, or rough, or stiff, first sow it with Hemp or Beans, which naturally will make the Land mellow, and destroy Weeds; yet notwithstanding will assist it for the Purpose of planting of Hops.

If your Ground be large, till it in the beginning of Winter with the Plow, or if it be but a small Parcel, then dig it with a Spade.

The opening of the Ground in this Manner, let it be never so stubborn, will meliorate it, by means of that fertile Quality which reigns in the Winter Air.

And this should not only be done
the

the Year before we make our Garden, but every Year after repeated, as long as it subsists. For Labour, as *Xenophon* observes, and the common Practice demonstrates, is equal to any Manure.

“It is said, that the more Cost you bestow upon unprofitable Ground, the more Profit you raise from it: And as one Author has it, you will come nearer the Advantages the *Hollanders* receive by Trade.

One Observation which an old Hop-Merchant has made on the first Disposition of a Hop-Garden is,

That in some Cases much Pains may be saved, *i. e.* Where the Mould is not deep, make the Hills as large as possible; so that if the Hills were again to be pulled down, the Earth contain'd in them may sufficiently cover the whole Garden, and destroy all the Weeds growing in it.

In such a Case, we suppose that Clay is the Bottom, and has not perhaps above three or four Inches Mould on the Surface, and here unless we bring in auxiliary

iliary Earth or Manure, our Hills must necessarily be set wider asunder, than in such Grounds as have great Depth of Mould; for by no Means must a clay or chalky Ground be dug into, where we make the Hills, the Surface only except. What we bring in, only by Manures, must be the sole Foundation of every Hop-hill.

I have known some that have been at great Expence, in the making of Hop-Gardens, where the Grounds have been stiff, and of a clayey Nature, and especially where the Surface has been very thin, they have dug the Foundation of the Hills into the Clay itself, and fill'd them with prepar'd Earth.

But it is very certain, that whenever we dig into a Clay or Chalk, we make so many Basons to receive Water, which will lodge or stagnate there, notwithstanding the fine Mould we fill them with, and raise the Hills from, to the Prejudice of any thing that may be planted under them.

In the common Gardening way, with-
in

in a few Years, many thousands of Plants have been destroy'd by Preparations of fine Earth, bedded in Basons of this sort, to the great Discouragement of several Gentlemen of my Acquaintance ; who from the loss of Trees that have been planted in stiff Soils, by Gard'ners reckon'd to be expert in their way, have not only lost their Money, but have had good Reason to blame the Planters and their Judgment.

ARTICLE V.

Concerning the Setts of Hops, for planting a Hop-ground.

IN natural light Ground we may plant much earlier than in moist or wet Grounds that are stiff. I have observ'd before, the Hop will grow well upon the side of a dry Bank, and will prosper there ; it will likewise do well in a low Ground, even tho' it may sometimes be inundated, or subject to be overflow'd

verflow'd by Waters, provided the Hills in the latter Case are rais'd high enough to protect the Bud of the Hop from the Water.

Here we are especially to consider the use of Water; it is not for the Welfare of any Plant, to be loaded with Water close to the Stem, but consider the smallest Fibres of its Roots, and feed them generously and easily by frequent Waterings, rather than by a great Glut; for where Water stands a long time above the Buds, or Germs of the Plants, they are dispos'd to rot, especially the most tender of them; but the Fibres of the Roots, could they be fed continually with a small share of Water, such as they could naturally imbibe, would bring such Fruit as would be desirable to all Planters.

It is not only in the vegetable Kingdom, but in the Animal likewise, that this Case ought to be considered; for how unnatural would it be, to pour Liquor down the Throat of any Creature when the Appetite was not desirous of it,

it, or even to force a greater Quantity, when the Appetite was open, than it could regularly receive? The first would occasion a Fever, and the other would be next to Drowning.

It is for this reason, that I have endeavoured to make the Gardiners sensible of an Error they have been too frequently guilty of, watering Trees and in other Plants with abundance of Water, in Grounds which are naturally moist.

I suppose this has been practised, because in hot Seasons the Surface seems dry and parch'd; but they ought to consider the Nature of their Land, and the Humour of their Plant.

It is but too common that Plants have been rotted in their Roots, which are their Mouths, by too great abundance of Water: And it is almost as common, that the Stems have been Hide-bound, when great Quantities of Water have been thrown too near them.

Gentle Usage is natural, and a forced Consent is always to the Prejudice, if not the Destruction of a Plant, I

I remember a Gardiner who in a very dry Season had several Peach-Trees against a South-Wall, when there had been no Rain so long, that he dreaded the Welfare of his Trees, there was nothing to do but watering, and he gave many of them great plenty of Water close to the Stem, but most of the Fruit fell off; while on the other Hand, I directed the out-sides of the Borders to be watered plentifully, where I guess the more tender Fibres of the Roots of some other Trees might lie, and the Fruit ripen'd to Perfection.

So in the Case of Hops, if it could be possible, I would rather choose to water the Alleys than the Hills themselves, remarking before-hand, that we should not let them suffer by Drought too much, but in such a Case the Hills ought to be likewise refresh'd.

As I have observed above, that the Hop should be planted earlier in light Grounds, than stiff Soils, and in dry Lands sooner than in wet, so to come to Particulars in that Point, all

light dry Grounds may be planted at the end of *February*, and in the moist and more heavy Soils, not till the end of *March*, observing that the Buds are not shot, but preparing only for Vegetation. About this time, a little before the Plants sprout, is the proper Season for rectifying the Hills, and dressing them, as also of thinning the Roots; wherefore it is best to collect or store at this time for any new Plantation.

It hath been observ'd, that where the Hills are high, the Roots are much stronger and larger, than they are found to be when the Hills are low.

In the Choice of your Roots for planting choose the largest, and let every Root you provide for setting be nine or ten Inches long.

Each Root should at least contain three Joints.

Take care likewise, that such Roots as you gather for your Plantation, are all of the last Year's Growth.

Some defer the trimming and dressing of their Hills till *April*, when the Hops begin

begin to shoot, but 'tis too late then to transplant in a profitable Way.

In the thinning of the Hills, leave the strongest Buds for bearing, and the rest make an excellent boil'd Sallet, to be prepar'd like Asparagus. These are often brought to Market, under the Denomination of Hop-tops, and are of great Efficacy in Distempers of the Kidneys, and urinary Passages.

ARTICLE VI.

Of the Choice of Hops, as commonly distinguish'd one from another, by Country People who make three Sorts of them.

MOST of the Hop-planters make three sorts of Hops, one of them they name the good or master Hop, or manured Hop, or garden Hop.

The other they call the unkindly Hop, and some call this the Fryer, others call it the male Hop, but without Reason.

The third Sort is that which they call the wild Hop, and some likewise call this the Savage.

One of my Correspondents describes the good Hop thus; it has a great and green Stalk, a large, a hard, and a green Bell, this as well as all the others, make their first Shoot about eight Inches from the Ground, without shewing any Leaves, and as far as that length, such Buds as we can spare from our Hills are fit for eating, to be ordered like Asparagus.

The unkindly Hop is describ'd to me in the following Terms, *viz.*

The Hop that likes not his Entertainment, namely his Situation, his Soil, his Manure, or the manner of its Planting, will come up green, and with a small Stalk, soon running into Leaves that are thick and rough, almost as a Nettle; these are commonly devour'd, or much injur'd, with a little black Fly, such as sometimes may be observ'd towards the latter end of the Year upon tall Hops, where the Garden stands bleak, or upon such as spring early.

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But however, if this happens to appear in the beginning of the Hop-shoot, it may be mended by watering, or especially if gentle Showers should happen in *April* or *May*; but again, if the Hops should suffer at the latter end of the Season by this Fly, which feeds upon the Leaf only, and perhaps eats the Leaf as full of Holes, as a Net, yet the Hop itself seldom suffers, if it were well bell'd before the Fly came on.

The wild Hop, as it is describ'd to me, is said to bring a Fruit or Bell either altogether Seed, or else loose and red or light Bells; the Stalk of this is red, and the Difference between the good and wild Hop is not to be discerned, till the Stalk or Vine be two or three Yards high; for at their first coming up, the one as well as the other appeareth red, but the best Hop is then the reddest.

This Gentleman seems to intimate from the foregoing Observations, that one ought to view a Hop-Garden, and consider the Goodness of the Hops in
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it the Year before we make our Plantation from it.

When I consider the Manner by which the three several sorts of Hops are describ'd above, I can find no natural Difference between the first two Sorts, for the good Hop and the unkindly Hop seem to differ only from one another by Accident, such as ill Management, &c. And the wild Hop, as call'd among the Hop-planters, seems to be the effect of ill Management and Blasts, for I have myself gathered the Roots of Hops for a new Plantation, that were esteem'd, in the Garden they grew, to be of the unkindly Sort, but when these came to receive the Benefit of fresh Grounds, they produced as good Hops as any that were brought to Market.

The *Botanists* make a Distinction between the Male and Female Hop, and it is almost impossible to plant any Garden without having some of the Male Hop in it, how careful soever one be.

Having made your Provision of Roots, the best way is immediately to lay them
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in dry Sand, or dry Earth, or in such a Manner pack them, that no Air may get at them, before they are planted in their proper Places. For however good the Roots may be of themselves, if they happen to dry by the Air, before they are planted, they will bring weak Stalks, and sometimes will be irrecoverable.

It is best to take them up, if possible, the same Day you design to replant them, or if that cannot be done, as soon as you bring them home, to bury them in the Ground, till Weather and Leisure will permit you to make your Plantation.

Some recommend the laying of them in Water, till they can have time to use them, but I don't hold their Opinion to be good; for tho' they may all grow, they will be apt to shoot with too much luxuriance, to bear well or profitably.

However, if we lay them in Water or thin Mud, when we either have not Time nor Opportunity to dig a Hole for them immediately when they come Home, as may happen, when Teams and Carts come late at Night to the Place;

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they

they must not be suffered to lie above twenty Hours in that Condition; but if we bury them immediately in the Earth, they will remain good, and fit for Planting, all the planting Season over, till the middle of *April*.

Your Garden being dress'd or till'd by Plowing, or with the Spade, as I have directed above, the Hills may be made at equal Distances, by a Line that will not Stretch, having fastned to it at certain lengths wooden Pins, according to the Proportion of Space you propose to leave between your Hills.

These Pins should be carefully ranged at exact Distances one from another; for if one happens to be out of Order, the whole course of the Garden will be irregular.

ARTICLE VII.

Of the Distance of Hills.

IF your Garden consists of an Acre of Ground, and lies square, leave between every Hole or Center of a Hill, three Yards or eight Foot at least, so that the Hills may be made the larger, and the Hops of one Pole, reach not to another; at this distance likewise the Sun will have a free and universal Passage through your Garden, which will bear plowing, when the Hops are down, between the Hills; whereas otherwise, you must be at the Expence of digging, which is a costly Way.

If your Garden is small, and you raise Hops for your own Convenience, your Hop-Hills need not be above seven Foot asunder.

The Line by which we must regulate all our Hop-Gardens, whether they are large or small, must be divided as I have

said above ; with Pins after the following Manner.

For we must be sure of our Line, before we can expect any Beauty or Regularity in our Garden.

The Lines should be just and true, rather set in the Quincunx Order, if possible, because that Order gives more Liberty, and more Air for the Plant to flourish, than the plain Lines opposite to one another.

We can moreover see through the Avenues, planted in the Quincunx Manner, and in every Way there will be a regular Walk ; but there are Books enough which have particularly describ'd the laying out such Walks, as well as for the setting of those which one would choose to be parallel with one another,

The Line which one of my Memorandumists gives us for guiding or laying out a Hop-Garden in a regular Manner, is made after this Sort, as it is here described.

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One of my Correspondents, who recommends this Line for marking of the Ground, bids you first strain it upon the level of the Land, and mark with every Pin of Wood the Center of every Hill you are to make; and he advises when the Ground is mark'd out in this fashion, to dig Holes about one Foot square, and two deep: But I dissent from his Opinion, if the Ground happens to be a Clay, for the Reasons I have given above; however, we may always venture to dig as deep as the Mole, or Surface of the Earth, even tho' there is Clay at the Bottom, provided we do not dig strictly into the Clay.

If indeed the Ground is sandy, or light, we may dig as deep as we please, provided the Soil is not incommoded by Waters; or if the Ground consists of a Sand tolerable sharp, or binding, then if Waters sometimes overflow the Land, such
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Inundations will rather mend than harm the Hop.

Another Animadverter bids us carefully take notice, that we should plant our Hops as soon as our Holes are made fit for them. His own Words are *viz.*

When you have made twenty or thirty Holes, take up as many Roots as are necessary to plant the Holes that are made, *allowing at most six Plants to a Hole*, always watching a Time if possible, when the Weather is clear and gentle, not exceeding the middle of *April* on any account; for he that exceeds this time, will certainly lose many Plants.

The same goes on to guide us in the Planting; his Advice is, to take two or three Roots, which will by that time shew their Buds, and perhaps some tender Fibres, or small Roots growing out of them, which must be all, except the larger Buds, pared away hard by the old Root, then holding them close together, so that the Tops are even one with another, set them upright in the

the Center of every Hill, holding them hard with one Hand, while you fill the Hole with the other with fine Mould prepar'd for the purpose, observing that the Tops of the Sets be level with the Surface, or uppermost part of the Ground.

He further dictates to us, that we must be careful to set the same end upwards, of every Set that grew before, which you may know by the manner of the Buds, which appear on the Knots of each Root, and let no part of the dead Stalk remain upon the upper Joint.

He goes on to tell us, that when you have done this, you must press down the Earth hard with your Foot, treading the Earth close to the Sets, without bruising or breaking the Buds.

He notes further, that one should observe, at this time of Planting, the Hills must not be rais'd, but only let the Top of the Hop-sets be covered, about two or three Inches thick, with the finest Mould you can get.

If by accident you have not Opportunity to set your Hop, till they have

begun to shoot, you must be careful the tender Shoots be not covered with Earth, otherwise, you will destroy both the Spring and the Root.

But this is an old way of Management, and not so generally practised in our time in *Kent*, as it is in *Surry* or *Hampshire*; tho' in the two last Counties some Hop planters rather choose to follow the *Kentish* way; viz.

When the Holes are prepared and manured to the best Advantage, the *Kentish* Planter with a Dibble or Setting-stick makes a Hole downright in the Center of every Hill, (that is to be) and there plants a single Set, and afterwards, five others round about it, at proper Distances; tho' I think four would be sufficient, unless your Hills were very wide asunder, closing the Earth very well about each Set.

In planting and dressing of the Hop, care must be taken that the Root that shoots downwards, must never be cut, for it weakens the Plant, and will subject it to the Fly or Blight.

In *Kent*, after planting, the Farmers
take

take no small care in covering; when it is dry Weather, the Tops of every planted Hole, about three or four Inches thick, with the lightest and finest Earth they can get, especially of a Virgin Soil, if possible; for the Criticks there do not allow the use of Dung in any of the Earth, that is to be laid immediately on the top of the Buds; however, after it is well rotted in the Paths or Avenues, and well mixt with a natural Soil, it is flung up to enlarge the Hills.

It is observed above that fresh Dung always breeds Insects, and especially the Fly, which oftentimes annoy the Hops very much.

I have lately met with a Memorandum, of one of the first Hop-planters, not unworthy our Notice, *viz.*

“ Some use to set at every corner of
“ a Hole, one Root, but this a naughty
“ and tedious Trade.

“ This way you shall so cumber your
“ self, and your Garden, that you will
“ soon be weary of working, and your
Garden be as soon weary of bearing.

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Give me leave a little to interrupt the Lesson of my Author, while I observe according to what has been said above, of the different ways of planting in *Surry*, and in *Kent*; one is to set three or four Roots together, in a Hole, and the other to set one Plant in the Middle, and five round about it, in each Hole, in the Remark above, my Author mentions the planting of four Sets in a Hole, and supposes that the Garden will sooner wear out, and degenerate from bearing.

It is however certain, that in most Plantations we are apt to indulge our Fancies, in planting great Quantities for present Shew, without considering a lasting Profit.

In planting several Sets in one Hole, in due Distances from one another, one of my Correspondents observes, that in the first Year of their bearing they will make a grand Appearance, but will not last so long, as those which are planted only in the Center of the Hill; for we shall have in the Plants, which are set at Dis-

tances, many Suckers, or Off-Sets, which so much incumber the Hills, that it is become a Custom where that Practice is used, to thin the Hills of Roots every Year, after they begin to bear, which are more abundantly found in the Hills, planted in the free way, than in those where their main Crop is in the Center; however, neither of these Methods can keep us from a good number of Off-Sets, which must be taken away every Spring, about *March*, or as some do about *October*; but it is better, in my Opinion, to prune and cut the Hop in the Spring, than towards Winter; because the Frost may do injury to the Roots, that are prun'd in the late Season of the Year. But to return to my Author; he goes on to tell us, " That
 " some wind them, or twist them, and
 " set both ends upwards; and he adds
 " (in a merry Way) that the Cunning of
 " the Workman, and the Goodness of
 " the Roots are very livelily express'd, for
 " if the Roots were good, they could
 " not be so wound or folded, or if

the Workman was skilful, he would not be so fond to set them in that Order.

He again inveighs against another sort of Planters, and puns upon them, who (in his own Words) lay their Sets *thwart and flat*; but he says *flatly*, that the same is an *overthwart* and preposterous Way; for they can neither prosper well, as being set contrary to their Nature and Manner of growing, nor be kept as they ought to be, because the main Roots will be cut when the Hills are dress'd; this he calls an Abuse in planting: He goes on to inform us, that some make Hills at first, and set their Roots therein, but these, as he observes, exclude themselves from ministring Succour to the Plants any time after.

He further observes, that some, as soon as they have set their Roots, bury them in a great Hill; and this is as prejudicial as the foregoing Abuse, saving only the Hill so choaketh those Sets, that most commonly they grow not at all.

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He concludes in the following Manner.

“ Finally there be as many evil Ways
 “ to set, as there be ignorant Men to
 “ devise.

I find in another Memorandum, that if the Hop-Garden happens to be near the House, it must be well defended or fenced against all manner of Fowls, as well of the Land as of the Water; for every sort of them that is familiar about the House, will upon the first Appearance of the Jerm or Bud of the Hop crop off the Top; but the Goose especially will eat the Tops, when they are four or five Inches long; and for the common Poultry, such as Cocks and Hens, finding the Earth on the Holes, or Hills, soft or light, will scratch in the Spring, and break many of the principal Buds, or first Leaders, either of which will occasion the Destruction of the Hop-Ground; besides that the Buds so wounded will never recover themselves, the Ropts will be greatly weakened by it.

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ARTICLE VIII.

*Concerning the first Year's Management
and dressing of the Hop.*

WHEN the Hops have been planted about a Month, and the Weather has been favourable, they will begin to shoot, tho' for the most Part but weakly, if the Weather has been very dry; wherefore it is seldom customary on such Occasions to give them any Pole the first Year; but if the Weather happens to help the Care and Industry of the Planter, some or most of the Plants will be strong enough, to admit of short Poles; however, if the Shoots of our Hops prove weak this Year, it is usual with some Planters, about a Month or five Weeks after they have made their Spring, to tye the *Shoots* or *Binds* round in a loose Knot, which will greatly help the Root, and feed it against the Year following.

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In *October*, these Hops may be dress'd by a careful Hand, opening the Hills directly, and gently cutting the Bind, a little lower than the Surface of the Earth, and then covering the Tops of the Plants about two Inches with the finest Earth that can be got, and upon that a little Coat of Earth out of the Alleys; this is the *Kentish* way.

But in *Surry* and *Hampshire* they leave the Bind a Foot long, when they gather the Hops, and do not dress them till the Spring following.

Whenever we dress our Hops, we ought to choose dry Weather, that the Earth we lay on them may lye close and fine upon the Buds.

In the Business of dressing Hops in the Winter it must be considered, that the Earth which is flung on them out of the Alleys, over and above the fine Earth lying on them immediately over the Buds, will assist in defending them from the Frost of the Winter; thus far from the first Year's dressing.

ARTICLE IX.

Of the second Year's dressing, the Kentish Way.

IT is necessary however, if we have dressed the Hills the first Year in *October*, to dress them the *February* following, when again the Holes must be carefully opened, and the old Shoots or Binds must be cut within an Inch or two of the old Roots, and as these Binds are very tuff, this Operation must be done with a very sharp Knife; for if our Instrument cuts with Difficulty, we shall be apt to break the small Fibres, or disturb the main Root, which will rob the Shoot for the following Season, of a considerable Share of its Strength.

At the same time that we prune the Binds, we cut the Roots clean off, which incline to spread to the outside of the Hills; this Year the Poles may be about ten or twelve Foot long.

ARTI-

ARTICLE X.

Of the third Year's dressing.

THE dressing of the Hills in the third Year, should be as in the second and first Year, *viz.*

When the Hops have sprouted, and shoot about five or six Inches, set up the Poles, which may then be of a full Length, for we may that Year expect a full Crop.

According to the Strength of our Binds, we may charge each Hole with two, three, or four Poles, tho' I think three is enough for the strongest Hill ; for we should by no Means covet more Shoots than can be strong and fruitful ; I have known some, who through Covetousness of having many Leaders, or Binds, have made good the Proverb, *All covet, all lose.*

The Poles should be placed at equal Distance from one another, near the outside of

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the Holes, so disposed that their Tops may incline a little outwards, lest the Hops bind themselves there together, and prevent likewise the Passage of the Sun amongst them.

It will not be unworthy of Notice, to mention what I have met with, in some Papers of early Date, concerning the poleing of Hops: my Author's Words are these.

If your Hills are distant from one another three Yards, provide four Poles for every Hill, but if you make your Hills nearer together, as seven Foot or thereabouts, then three Poles will be enough for each Hill: That Gentleman, whoever he is, describes that Manner of planting which was first practis'd in *Surry*, and accounted famous from the great Estates that have been rais'd there, by the Hop Improvement, at its first Introduction into *England*.

I learn from the aforesaid Gentleman's Remarks, who I find builds all his Purposes upon planting three or four Hop-Roots in the Center of every Hole, that
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the first Year as many Poles may be used as any Year after; whose Writings, as I shall have Occasion to introduce them, I shall render familiar to my Reader, especially when I shall have Occasion to speak particularly of raising the Hills in a Hop-Ground.

In the mean time I cannot help observing, that the different ways of planting occasion different ways of poleing the Hop.

The Poles which are best fitted for this Purpose, are those made of Alder, and next to that Willow or Sallow, which are all quick Growers, and may be rais'd in few Years.

Some however use Poles of Ash, but those may be turned to much better Profit for Hoops, &c.

My Author mentions only Alder Poles, considering them to be of the best Fashion, that is, growing Taper, small above and great below, whereby he guesses, that the Hop in its twisting way of Growth, seems to approve and like that Shape; for being strong in its first Shoot,

'twill more naturally embrace the larger Part of the Pole; than it can do at the end of the Year, when its over luxuriance is past.

Likewise he imagines that the roughness of the Alder Rind, may be a Means of staying the Hop-bind more firmly from sliding down the Pole, than either Ash or Oak, which I find was used in his Days; which latter sorts of Wood, he tells us, are supposed to be of longer Duration than the Alder; but the Alder will endure six or seven Years, as I shall mention hereafter.

The Alder Poles, he tells us, are the cheapest and easiest to be got in most Places, besides the quickness of their Growth.

It is a plain Case, that he lived in a Country well watered, for Alders never grow in Prosperity, but in swampy or moist Grounds, such as are in the Vale near *Farnham*, towards *Moor-Park* Side.

It is observed again, that Cattle do not bite nor destroy the young Springs of Alder, as they do those of Willow or Sallow.

It

It is observ'd further, by the same Author, that in the Expence of Alders there insues less Disadvantage to the Commonwealth, as well for the Causes aforesaid, as because the Alder never makes a Timber Tree, or is fit for other Purposes, as are the Oak and Ash.

From another Remark concerning Alder Poles, it is said that they must be cut between All-Hallow-tide and Christmas, trimming them and piling them up immediately after they are cut, regulating them for the Purpose you design, and sharpening their Bottoms free from Bark, lest as they stand in Piles, they strike Root before you come to use them; for nothing is more subject to grow than this Plant, let it meet with what Soil it will, if there be the least Moisture.

I have another Memorandum, which regulates the Poles according to the Richness of the Ground where the Hops grow; in which it is observ'd, that the Poles where the Hop grows luxuriantly, should be at least four Foot longer, than where the Hop does not thrive, or prosper with so much Vigour. There

There is a great deal besides the Goodness of the Ground likewise to be considered in the Care and good Management of the Hop, as well as the Goodness of the Earth in which it grows.

Also the nearness of the Hills will occasion the Hop to produce weaker Stems, tho' yet they will bear a good Crop; in such a Case the Poles need not be so long, as where the Hills stand at wider Distances from one another; for the more circumambient Air a Plant has, the more generous it will be in its Growth, and Productions; so on the contrary, where a Plant has a less Share of Air, it will not arrive to such a Perfection, as the well expos'd Plant.

I remember a Gentleman who had but little Ground for gardening, who had a Mind to raise a Crop of the Ronceval Pea, and reading in one of my Works the Estimation I had made of the Quantity of Peas that every Rod of Land would produce, resolved with himself to raise a greater Quantity of Peas than I had propos'd from the same Quantity

Quantity of Ground, proposing mathematically to himself, that if I could bring a certain Measure of Peas, by eight Lines or Rows in a stated Quantity of Ground, he could, if he doubled the Number of Rows that I had mention'd, reap a double Profit; but all his hopes were frustrated, for he had scarce a Quart of Peas on the whole Ground, Husks and all; the Reason was, that they were set so close together, that the Roots wanted both Air and Sun, which make the chief Life of any Vegetable.

My Papers give me an Observation not disagreeable to what I have said with regard to Hops, *viz.*

Where the Hills in a Hop-ground are set too close together, the Hops will grow from one Pole to another, and intangle themselves, over-shadowing the Garden, and hindering the Roots from the Sun, and the Passage of the Air thro' the Alleys.

It is said, moreover, that the Hop *stocks* kindly, or in other Terms, *balls* or brings its full Crop, 'till it has got
above

above the Pole, and bends down, or returns a Yard or two below the Top; for while it tends to climbing upwards, it is observed, that the Branches which grow out of the principal Stalk (wherein consists the Abundance of Increase) grow little or nothing.

Another Remarker tells me, that the thicker the Poles the longer they will last, and the Measure given by that Author is, that the lower End of each Pole next to the sharpened End of the Point should be nine or ten Inches in Circumference, or about three Inches diameter.

But such strong Poles as these need not be used over the whole Garden, rather place them on the most windy Sides, to defend the others; four or five Rows thick of them may support the Vines or Hops within side the Garden from the Insults of sudden Tempests.

There is another Remark, which yet relates to the poling Part of the Hop-Garden.

It is said in that Memorandum, that a Wayne or Waggon will carry a hundred and fifty Poles, and by the same it is observed, that after the first Year of Poling the Poles will be little or nothing chargeable to you, for as any decay you may readily turn them to Fewel, which will nearly answer the Expence of a Supply, from such Neighbours as have no Occasion to use them in this Way. But by Way of Caution, take this Advice. If you live in a Country where Poles are scarce, raise no Hop-Garden, for the poling of the Hop is more expensive than the Planting.

I have in some of my former Works hinted concerning this Particular that where Wood for Poling is scarce, and we have a mind to raise a Hop-garden, we must begin first with planting Alders or Willows, if we have the Advantage of wet or moist Land, which in three or four Years will bring us a Crop of Poles for our Purpose, and continue ever afterwards to furnish us with a Supply, either for ourselves, or to sell to our Neighbours.

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In my Book called, *The new Improvements for Planting and Gardening*, I have largely descanted upon that Head.

A Memorandum that is now before me advises, in a very familiar Way, to use the rotten and broken Poles for firing in the Kiln or Ofte (as my Author calls it) for drying of Hops: So that it seems from this and another Paragraph which I have of the same Author's, he would make a Hop-garden when it is once fixt to maintain itself; for he mentions,

That at *Poppering*, where in his Time Scarcity of Wood made the People provident, they generally planted the East and North Sides of their Gardens with Alders, by which Means they continually maintained their Hops with Poles for their Growth, and provided Fire for the Kilning of them, to render 'em profitable in the Market.

It is further recommended, before you have set up your Poles, to consider the Strength of every Hole of Plants, and in Proportion to their Vigor let the Person who carries the Poles into the Garden

den drop as many at each Hole as he passes through the Alleys as may be necessary to support the Hops therein, which will save Time in the Work of Poling.

ARTICLE XI.

Of setting up or erecting the Poles.

IT is the common Way, as I have remarked above, to set up the Poles when the Hops have sprouted about six Inches, but without Doubt the sooner we set up the Poles the better; provided we know where the principal Roots stand, which cannot well be discerned, till the Buds have shot some little Way out of the Ground.

The Hop being a twining or twisting Plant in its Manner of Growth, very early after its first Germination, seeks for a Supporter, as all Plants do that are of a twining Nature; therefore I think that the sooner we give such Plants an Help, the better it will be for their Prosperity.

When you set up the Poles, make the first way into the Ground of the Hill with an iron Crow, or a long wooden Dibble fac'd on the Point with Iron.

This Instrument should be about three Foot long, and not altogether so large as the Poles that you design to fix in the Hills, that the Poles may take the better Hold.

The Top of the Instrument should be like that of the Handle of a Spade, either with an Eye handle or a Crutch, the better to give the Workman an Opportunity of forcing it into the Ground.

One Remark which I have relating to the early placing of the Poles on the Hills seems not inconsiderable; for one of my Memorandumists observes, that when the Shoots or Vines of the Hops are suffered to grow to any considerable Length before we pole them, that either in raising the Poles, or in fastning of them by ramming, or otherwise, the Hop will be in danger of bruising or breaking.

Another

Another Reason he gives us, for carefully polling is, to prevent the Trouble which otherwise you must be at, in laying every Stalk or Vine of the Hop to the Pole, that is to climb upon.

It is further remark'd, that if the polling of Hops be omitted, till they have shot too far, they will not, according to their natural Force, so easily raise themselves upon the Poles; for their own Inclination is, as soon as they begin to shoot, to attempt the nearest Standard they can meet with to twist about, or in failure of any thing of that Nature, they immediately twine about one another, and choke each other; they may perhaps some or other of them in that State bear a few Hops, but to very little Purpose; therefore it is no bad Remark of an ingenious Gentleman, who says, set up your Poles upon the first Shoot of the Hop, that the Vines may have their full Growth, and bring forth profitable Fruit.

The same informs us, that you must set every Pole a Foot and a half deep,
and

and within two or three Inches of the principal Root, taking care especially not to hurt the Root of the Hop, for that would prove as fatal, as breaking or bruising the young Shoots.

We have another Observation, which likewise concerns the setting up of Poles, which I shall give my Reader to consider of, which seems to be a little disagreeable to what we have said before; and that is, if your Ground be rocky and shallow, your Poles need not be set up till your Hops have shot up two or three Foot; because then you may venture to raise your Hill or Bank high enough to sustain or uphold your Poles,

ARTICLE XII.

Of the ramming and fixing of Poles.

THE Affair of ramming the Earth close to the Poles, when you have plac'd them in their proper Order, ought to be nicely consider'd; what we do

do of this Kind, should be done on the outside the Poles, as we have plac'd them, but by no Means to be attempted within their Compass, lest you break or bruise some of the young Buds.

The ramming of Poles is done by a Piece of Wood about three or four Foot long, and about the Thickness of three Inches towards the Bottom.

ARTICLE XIII.

Concerning the Reparations of Poles, that happen to be broken by Storms while the Hop is in its growth.

IF by high Winds or Storms, or any other Accident, any of your Poles in your Garden should be broken, while the Hop is in the Vigour of its Shoot, or between the time of its first Germination, to the time of its coming to Bell or Fruit, use the following Method:

When a Pole is broken, undo and pull away as carefully as you can the
bro-

broken Pole, avoiding any Wound or Bruise of the Hop, then raise a new Pole, twining the Hop two or three times about it, according to the course of the Sun, or as we may perceive it twines of its own Inclination.

Set the Foot of the Pole by the outside of the broken Pole, and tie the Head of the Hop gently to the top of the Pole.

Some who do not care, or have not Opportunity of bringing in new Poles on this Occasion, will twist the fallen Hop about some auxiliary Pole standing in the same Hill, tying it at the top as before directed; this Method however, may save us some Hops in particular Cases; but what the injur'd Hop gains by the Favour we do, it may perhaps injure the thriving Hop, upon whose Pole it has its Dependance.

It is however necessary, that when any Pole is broke, and the Hop is at a good Hieght to repair the Damage immediately by any of these Ways, for the Crop of one Hop-plant will sufficiently pay our Care.

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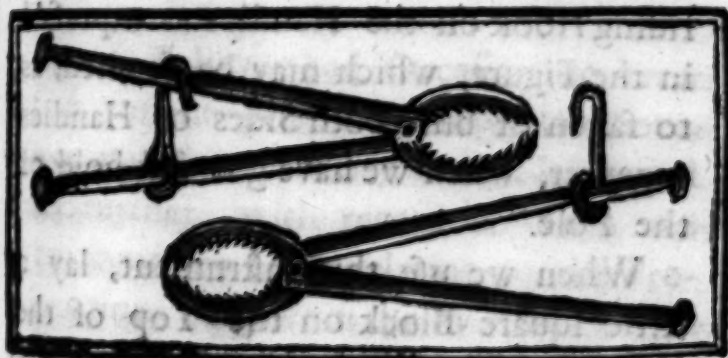
Memorandum, if the Pole be only broken at the end next the Ground, it may be again sharpned by a discreet Hand, and set upright as it was before.

ARTICLE XIV.

Of the drawing of Hop-poles or pulling them up, &c.

WHEN the Hills are made large or high, it is difficult to lop your Poles without breaking, or other Inconveniencies that may arise by disturbing the Roots, especially if the Ground be dry, or the Poles old or small.

We have an Instrument which is recommended to us for this use, which the following Figures will describe, and



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therefore we shall have the less trouble to explain it ; this is of the Nature of that which we call a Dog, by which if the Poles are tolerable sound, one may pull them up without breaking their Points.

These Pincers or Dogs must be made of Iron, about a Yard long, in which Length, about six or seven Inches may be allow'd for the Mouth or Jaws of them, which serve to clasp or take hold of the Pole ; the Jaw or toothed part of the Instrument should be the strongest, the Mouth being somewhat hollow, with Teeth to take the faster hold of the Pole.

The Smith when he has made a pair of Pincers of this Sort, must fasten a riding Hook on the Handles as express'd in the Figure, which may be so used, as to fasten or bind both Sides or Handles together, when we have got fast hold of the Pole.

When we use this Instrument, lay a little square Block on the Top of the Hill, which may have, for the better removing

moving of it from one Hill to another, a Handle of Wood drove into one side ; upon this Block you must rest your Pincers, after you have claspt the very lowest Part of the Pole, fastning at the same time, the two Handles of the Dog with the riding Hook ; hold then the upper part of the Pole, pulling it towards you a little, and pressing down the Handles at the same time of your Iron Dog, the Pole will easily come out of its Place.

ARTICLE XV.

Of the Preservation of Poles in the Winter.

AS I have had Occasion to treat of the poling of Hops just above, so it will be necessary before I proceed any further, with regard to Hops, to give some few Hints relating to the Preservations of Poles in the Winter.

A Gentleman of good Sense and Under-

standing in this Way advises to build a Shed in the middle or some corner of a Hop-Garden, which may serve as well for the picking of the Hops in the gathering time, as for securing the Poles in the Winter from Injury by Weather.

In some Places they think it proper, when the Garden is discharged of its Hops, to make little Floors at proper Distances, either of Brick laid loose, or something that may be equivalent; the Design is, when we set up our Hop-Poles in Parcels, that the Ground-End or lower End of them may not be subject to rot by the Moisture of the Earth; perhaps one hundred, or one hundred and fifty Poles may make one Pyramid; for it is in that Fashion they stand, when they are set up, and depend upon one another, while the Hops have no more to do with them.

Amongst my Memorandums I find a Direction, which advises to set them upright against a Tree, and over them to make a Pent-house of Boards or Boughs.

Some

Some again will lay a heap of the Hop-Haulm, or Hop-Bind upon the Ground, and upon that three or four Layers of Poles, upon which they raise a Pyramid of other Poles, covering the Top either with Straw, or an heap of Hop-bind.

ARTICLE XVI.

Of tying of Hops in their first Shoot to the Poles.

IT is the Opinion of one of my departed Correspondents, as appears by his Writings, that Hops should not be longer neglected, to be led and tied to the Poles, than when they are two or three Foot high; for Winds may happen which may bruise and disturb the young Shoots, and ruin the Crop in its Infancy; for whatever bruises the Shoot while it is tender, will certainly end in the Disappointment of our Expectations.

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In the tying of Hops, there are several Practices used ; one of the greatest Note with me, is from a Gentleman that dates himself from *Maidstone in Kent*, May the 1st, 1721.

He says, that when the Shoots are three or four Foot above Ground, employ Women to tie the Hop-binds to the Poles, for while they are young they are very brittle ; (he advises further) to tie two or three of the strongest to each Pole, and to cut away the rest ; he further directs, woollen Yarn or withered Rushes for that use, and carefully recommends the tying the Hops to the Poles, loose or freely, so that the Hop may be guided gently ; for, as he observes, if you bind them hard they will wither.

I must confess myself happy, when I find my Thoughts agreeable to those of a Gentleman who is known to be an *Adept* &c.

I have known the small Rush, as well as some Grasses, very useful on this Occasion ; but in short any thing that is tender

tender and gentle, and has such a Quality in it as cannot alter much by the Weather to press upon the Plant, will do.

Leather we know, however tender it may be when it is first receiv'd from the Curriers, and has been kept dry, will be soft enough to invite some to use the Strips of it upon such Occasions, but as soon as this receives the Wet, it dilates and opens its Parts, and immediately when dry Weather or Warmth comes to it, it shrinks and pinches whatever it is about, or encompasses, so that by no means is that or any thing of the like Nature proper to be used, on any Occasion where the Part it binds about is of a tender Nature.

ARTICLE XVII.

Of Hilling of Hops.

AFTER the tying of the Hop, we may begin to make the Hills for the

the better preparing, of which they have a Tool of Iron not unlike a Hoe, with a Stail or Helve about three or four Foot long; but this may be longer or shorter at the Pleasure of the Workman.

With this Tool you may pare away the Weeds or Grass that grows betwixt the Hills, as also you may raise your Hills, or pull them down as need requires, with this Instrument alone.

Some hold that it is not necessary to make Hills the first Year, because they distrust reaping any Profit from their Garden worthy of their Pains that Season; and because likewise they imagine that the principal Roots prosper the better, when there are no new side Roots shooting from it; but these Conjectures are not allow'd to be good, by the greatest Part of Hop-planters; for by Industry and Care the first Year's Profit will not be inconsiderable, and the principal Sets will be much amended and strengthened, as will appear the second Year.

Some are of Opinion, that the larger you make your Hills, the greater Quantity

city of Hops you will have ; moreover it is observable, the fewer Weeds you have in your Ground, so many more Hops you will have upon your Poles.

In short, when the hilling time begins you will every Day have something to do, till the gathering time, either raising your Hills or cleaning your Ground from Weeds.

There is a Remark seemingly of long Date which I have met with, that tells us, in the first Year we plant our Hop-Garden, there should not be one Hop-Shoot suppress'd, but they should all be suffered to climb upon the Poles ; for if we should bury or by accident cut off all the Springs of any one of the Roots, the Root itself would perish, and perhaps out of a single Root there may not happen to spring above one or two Shoots at most the Season after planting ; and such Shoots being either buried or cut down, which I have observed kills the Root, we should pole as many as we can.

After the first Year, you must not suffer above two or three Stalks at most

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to grow up to one Pole, and cut down and bury all the rest ; however you may let them all grow till they are about four or five Foot high, at which time you will be better able to choose those Binds which are properest for poling ; and besides not cutting or wounding the Plant till it is arriv'd to this height, will be a Means of strengthening the principal Root. Some suffer their Hops to climb up to the tops of the Poles, and then instantly complete the Hills, to remain without Alteration ; but I think the hill-ing ought to be done by Degrees, as it will help to keep the Ground loose and open.

Make your Hills well as they ought to be ; begin to frame them immediately after the Poles are set, framing a little Bank or Circle about the outside of them, to regulate how wide your Hills should be when they come to be finish'd, and also to receive and retain Moisture.

If your Garden be large, by that time you have made an end of these Circles
or

or Banks, it will be time for you to begin the raising your Hills, therefore return to the Place where you began, or else where you see the Hops are highest; then with your Hoe pare off the Surface of the Alleys, and lay that Earth upon and within that Circle that you made before, leaving the out Line always the highest.

Thus pass through your Garden several times, till you have rais'd your Hills by little and little, till they are as high as you design them. It is thought by some Hop-planters, by seeming good Reason, that how high soever your Hills be, so long will be the new Roots, and the greater those Roots are, the stronger will be the Bind, and the larger and the better the Hop.

Take Care in raising your Hills, and that no large overgrown Weeds be suffered to seed in your Garden; as for small Weeds, when they first come up, they will wither and rot in a few Days after they are cut; these, with the uppermost Mould of the Alleys, may

help to increase the Substance of your Hills.

In the first Year be not too early in raising of your Hills, lest in your Work you oppress some of those Shoots or Springs, which would otherwise have appeared out of the Ground.

It is adviseable, while the Hops are in the full Shoot of Growth, to pass now and then through your Garden, with a forked Wand in each Hand, whereby you may direct such Hops as decline from the Poles.

Some neither observe Time nor Measure, in making and raising their Hills, and these for the most Part fling away their time.

Others make their Hills once for all without ever pulling them down, or dressing them after the first making; but it would be much better for the Hop to have no Hill at all than to do so; for a Hill must be made new, and dress'd every Year, if we expect any Benefit from our Hops.

It is customary in some Places to cut
or

or break off the Tops of the Hops when they are grown to eleven or twelve Foot high, which indeed will occasion them to branch and stock exceedingly for bearing; but the Hops which they produce are not generally so large as those which are brought upon the Tops of the Shoots which hang down from the upper Part of the Poles, and it is better to suffer them to drop from the Top of the Pole when they have gained a sufficient Length from the Ground, than to give them Poles, which may be just of the Length of the Hop; so that over poling is a *Fault*.

If the Pole is very long, and therefore the Hops do not rise to the Tops of them before the middle of *July*, then it will be well to cut off the Top of the Shoot, that the Residue of the growing Season may serve for the Maintenance and Increase of the Branch, which otherwise would expire without bringing any Fruit. For that whole Time would be employed in the Lengthening of the principal Stalk, which avails little in
Com-

Comparison to the Stocking or Increase of the Hop.

And here we may note, that some Men who are over covetous, and too hasty to enlarge their Estates, will make their Hills too thick, or close together, their Poles too long, suffering also too many Stalks to grow upon one Pole.

This, as one of my Authors observes, overtakes the Covetous with treble Damage, while he runs away with flattering himself with being a double Gainer.

In very dry Seasons, especially while the Hop is making its collateral Shoots, or is in Blossom, they must be carefully watered: And it is advised by one of my curious Correspondents, either to infuse Pigeon or Sheep-Dung, which he thinks will make the Water more nourishing.

The common Allowance in *Kent* for the Size of the Hills when they are fully completed, is somewhat more than two Foot over, and about a Foot and half high.

About

About *August*, when the Hop begins to be in Bell, pare all the Alleys clean from Weeds with sharp Shovels, to clean your Garden, throwing the lightest of the Earth on the Tops of the Hills; at the same Time Women should be employed to strip the Leaves from the Binds of the Hops two or three Foot above Ground, these going before the Men who are to shovel the Vacancies between the Hills.

ARTICLE XVIII.

Of the gathering or pulling of Hops.

AMongst some of my Papers, written in the first Time of Hop-planting, we are told that commonly about *St. Margaret's Day* Hops blossom, and about *Lammas* they bell, and when they change to a brownish Colour, and the Parts of the Bell are loose, and yield a grateful Smell, the Seeds likewise beginning to turn brown, it is then we must make all imaginable Haste to gather them, procuring

curing at the Time of pulling as many Hands as you can, always taking Advantage of fair Weather, if possible.

For the Hops that are gathered wet are apt to turn rusty, and will not keep : It is a Note of some Import, that we had much better gather Hops too early than to let them be too ripe before we pull them.

To gather Hops after the best Manner, as advised in some of my Papers, is to pull down four Hills together in the Midst of your Garden, then pare the Plot and level it, throw Water on it, tread it, and sweep it as soon as it will bear the Broom ; this will make you a Floor to gather or pick your Hops upon. This was the old Way ; but the best will be to prepare a Frame about ten or a Dozen Foot long, and about four Foot wide ; set this Stand three or four Foot from the Ground.

To this Frame, by means of Hooks fastened on the Sides, fasten some coarse Sacking Cloth, to hang hollow in the Middle of the Frame.

The Pickers of the Hops may stand three of a Side, and be supply'd by one Man who gathers them.

When the Cloth is full, and the Hops clean taken from the Stalks and Leaves, remove them, and spread them in some clean and cool Place, that they may not ferment nor sweat before they are laid on the Kiln, for such sweating will spoil their Colour.

It is not proper by any means to pull them while they are wet, either by Rain or Dews.

Wherever this Frame is placed, begin to gather your Hops from the Hills next to it, cutting the Stalks of the Hops close by the Tops of the Hills; and if the Hops of one Pole happen to begin to be entangled one with another, cut them asunder with a sharp Hook fixt at the End of a long Pole, and draw the Halm over its Pole with a forked Staff, thrusting up with your Fork all the Stalks that are cut 'till you bring them over the Top of the Pole, and carrying them to their Frame or Floor, prepared for picking the Hop. N For

For the better raising the Hop-binds over the Poles, when they are cut from the Roots, all our Poles should be carefully dismembred of their Scrags or Knots before we set them up for the Hop to run upon.

It is a Remark of some Consequence that no more Stalks of the Hop-binds be severed from the Roots, than one may carry away in an Hour's Time at most; for if it should happen to rain, the Hops which are thus cut will suffer very much in their Goodness; or if the Sun should shine very hot upon the Hop-binds that are cut, and we were to leave them two Hours, or indeed a little more than an Hour before the Hops were picked, they would wither and lose a good deal of their Perfection.

All Hops should, if it were possible, be laid upon the Kiln as soon as they are gathered, for they dry much better.

Such as gather their Hops about a Floor should do it with all the Speed imaginable, stripping them into Baskets prepar'd for them; and so likewise those that gather

ther them upon a Frame should be as speedy as possible at their Work.

However it often happens by Haste, that the smaller Leaves of the Plant mingle with the Hops. At the Time of stripping, these Leaves are of good Vertue, and were alone sold in *Flanders*, Anno 1566. for twenty six Shillings and eight Pence a Hundred, no one Hop being mingled with them.

Those who use a Floor for drying should at least have it clean swept twice every Day.

If the Weather is inclined to be wet, you may carry your Hops into the House in Blankets, and there accomplish your picking Work; for the least Wet will damage them. Use no Linen in this Case, but such as you do not value, for the Hops will stain it so much as never to be washed out.

If your Poles be knotted, so that you cannot easily strip the Hop-stalks from them, then you will be obliged to pull up the Poles by main Force before the Hops are gathered.

The Manner of gathering the Hops from these Poles is to lay the Poles upon a Couple of forked Stakes drove into the Ground, remembring to dispatch the gathering of your Hops as fast as possible.

By all Means gather the Hops as soon as you can after they are cut from the Hills; for the Delay of that Work will occasion the Hop to shed its Seed, wherein consists a great Share of its Vertue.

When your Hops are gathered, as soon as you have Leisure, take up your Poles, piling them that are sound, as we have already mentioned in the Article of Poles, and appoint those Poles that are broken for the Fire, as well as the Hop-Haulm, which may serve for Brewing or such Works.

I am of the Opinion with a curious *Kentish* Gentleman, that if we were to prepare and order the Hop-binds as we do Hemp they would make excellent Cordage.

And now we may properly say, that we have done with the Hop-Garden till
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the *March* following, except you will in the Winter Season bring in Manure towards the strengthening of the Hills, or will give the Alleys a Winter's Plowing.

Some have advised to cover the Hills with Dung, but I choose to direct the barring of the Roots, by opening of the Top of the Hill, which is most generally practised to prevent the too early springing of the Hops, which will hinder their being blasted.

By all Means avoid new Horse-dung, and use no Sort of Dung at all but what is rotted and reduced to Earth.

When in *March* you return to your Garden, you must expect to find it in some Measure over-grown with Weeds, except you have prevented that by a Winter Tillage; however it should then be plow'd or dug in the Alleys, to render the Earth more fine against the Time we shall have Occasion to use it in repairing our Hills.

ARTICLE

ARTICLE XIX.

*Of Drying of Hops. And first of the
Kiln.*

IN some Places they build Houses or Sheds at the Corner of their Hop-Gardens, divided into three Chambers.

The middle or principal Room is the Kiln; one Room to receive your green Hops from the Pullers, and the third to receive the Hops when they are dried or kilned.

To give some Description of the Kiln will be necessary, although every one almost knows the Structure of it: For a Work of this Kind is not altogether for the Use of the Learned already in that Way, but to assist those who are unacquainted with the prodigious Improvement the Hop may make upon every Sort of Soil, whether it be barren or of low Price, or rackt up to the highest Rent to the Farmer.

A good Malt-Kiln may serve to dry them upon, provided we use Charcoal for

for that Purpose ; for there should no Smoak come at them.

Some build Kilns on purpose ; the Ich-nography is of this Kind, in the following Figure, which explains itself.



When we lay the Hops to dry upon the Kiln they ought to be at least six Inches thick over the hair Cloth, or as some do, if the Kiln is gently made, one may venture them eight Inches.

I reckon about eight Hours, or ten at most, will dry a Kiln of Hops ; and it is commonly practised where the most skilful Artists are employed, to lay them smooth with a Rake or such like Instrument, at their first laying on, that they may dry equally ; for every Thing that

requires this manner of drying, were it to lay unequally in its height, would roast more in one Part than in another.

On the Sides we must likewise take care to beat them up, to prevent their scattering.

The Fires used for this Purpose should be gentle and moderate, and preserve if possible a constant Heat.

There is I think a very certain Way of judging in any of these Affairs, of the Degrees of Heat, by the Thermometer, which is so well regulated by Mr. *John Fowler*, at the *Royal-Exchange*; because as his Instruments of that Kind are all agreeable and conformable to one another, so they all move strictly (or as one may say) act agreeable to one another; thus much concerning the Nicety of the Kiln, and drying of Hops.

By way of Memorandum it is observ'd by one of my Authors, that when you turn them while they sweat, they will burn and grow discolour'd.

To prevent which keep the Fire low before you begin to turn them, and then refresh

refresh the Fire again, that it may more immediately dry the Parts which at first lay uppermost, and expel their Moisture.

When you stir the Hops upon the Kiln after they have been turn'd, and find them to crackle and leap a little, as they will do upon the bursting of the Seeds, it is time to take them off.

After this lay them in the Room describ'd in the former Figure, keeping them close from the Air to prevent their Fermentation, or as the Hop-planters tell us, till they have lost their Fire, and are inclinable to give, (as they call it) and if they feel moist to the Hand, when you put it into the Heaps, they are fit to bag.

An old Author tells us, that some have practis'd the drying of Hops by laying them two Foot thick upon the Kiln, but it is impossible to dry them so equally if we follow that Method, as if we dry according to the above Method.

He further adds, that he has known some that have only laid their Hops

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in a by Room or Garret, without using any Fire, but this is very contrary to Reason, for they will certainly sweat or ferment sooner or later, according to the Disposition of the Weather they were gathered in.

Hops when dry'd this Way can never be fit for packing; for if the Season of gathering proves wet, the Hops will require a long Time for drying, even by Fire upon a Kiln.

It is remarkable that Hops dry'd in the Sun lose their Richness of Flavour, as all other Herbs do that are dry'd that Way.

Some use Hops without drying in Brewing, even green as they are gathered, but by good Fortune there are very few who are so wise and fond of this Opinion, That the Fire exhales the fine Parts of the Hops; but where such are used, one ought to have at least half as many Hops of the undried Sort as of the others.

I should have been more particular, concerning the building of the Hop-Kiln,
but

but there are so many of them to be seen about *Canterbury* and *Farnham*, that every one may be easily satisfied of their Structure.

ARTICLE XX.

Of bagging or sacking of Hops for the Market.

IT would be almost impertinent to prescribe any Rules for the making of Hop-Sacks, but seeing among my Papers that there has not always been the same Method used, neither in the Contrivance of the Sacks nor the filling of the Hops; I shall only set down what relates to the Way now in Use, which I cannot do better than by following the Directions of an eminent Hop-Merchant in *Southwark*.

He tells me that a Bag of Hops will generally contain about two hundred Weight, or two hundred and a Quarter.

These Bags or Sacks being made of three Quarters wide Cloth, and three Breadths wide, being about eleven Foot and a half long, will go near to hold the Quantity I speak of.

It is the Custom now a Days to have Samples of Hops in the Corners of every Bag; and those Corners at the Bottom must be first fill'd and ty'd up.

The Manner of filling Hops, is to stretch or keep open the Top of the Bag, by Means of a large Hoop, wide enough to admit a Man's going into the Bag.

When we bag our Hops, we must fasten the Top of the Bag to a Hole made in some upper Floor, where the bottom of the Bag may hang clear from any Interruption, a Foot at least free from the Floor below it.

Then sling in two or three Bushels of Hops, and let the Man go in to tread them till they ly close, with such Shoes as have no Heels.

Add then two or three Bushels of Hops, and let them be trod as they were

were before, continuing the same Work till the Bag is full, then sew it up, observing at the same time to put some Hops in the Corners, as you have done at the Bottom.

One of my Memorandumists observes in a merry Way, that there is an old Proverb which informs him, that *there is much Falshood in packing*; but he declares himself unskilful in that Art, and does us the Favour to tell us, that if he were otherwise, he would be loth to teach such Doctrine; his Reasons for using this Proverb in this Place, according to his own Words, are

That to avoid such Deceit, and to make the more perfect and better Choice, it is usual and lawful in most Places where Hops are sold, to cut the Sack that you design to purchase, in seven or eight Places, and to search at each Place whether the Hops be of an equal Goodness.

I find by what immediately follows in his Observations, that he very well understood what he was about; for he continues;

Such

Such Places of the Bags as you shall feel softer than the rest, you should especially cut, where perhaps you will find Hops of a different Kind, either older or worse than the Sample.

From such Doctrine I suppose it is, or from a Jealousy like this, that Merchants suffer so much at the Custom House; sometimes one may do Damage to the Owners of the Goods, and by chance meet with a Deccit, when if all Men were honest, there would be no Occasion to be so scrupulous.

But to return to my Subject concerning the keeping of Hops, when they are bag'd, let them be plac'd in some dry Room, or Garnier, or Grange, for wet or moist Air is destructive to the Hop; notwithstanding when we use them in brewing, it is not always that we can draw from them their Excellence in the Ale or first Liquor.

ARTICLE XXI.

Particular Observations concerning the Hop.

TIS remark'd, that the watering, of the Hop-Garden may be sav'd by frequent dressing, and making the Hills large.

In others of my Papers, I find that to flea the Poles is not worth our Trouble, for it will expend more Time than it is worth, and avail little to the Purpose.

Some choose to burn the lower end of the Poles, to make them last the longer between wet and dry; but my Author directs only to burn the ends of Willow or Alder Poles, to keep them from growing, which they will be apt to do if there is the least Part of their Bark near the Ground, or have any Life in them.

The same tells me, that it is of lit-

the Use to weed the Hills by the Hand, when they are not flower'd or seeded, because in raising the Hills small Weeds will be bury'd.

It remains only now to mention, that the Affairs of Hops is considerable to the State of *Great-Britain*, as they pay a large Excise, and have proper Officers sent down to the several Countries where they grow, and are proposed for Sale at the gathering time, to collect the Duty upon them; so that no one who plants Hops must expect to escape from the Law that raises Money upon the Hop, no more than upon the Malt; for both are subject to a certain Payment by Act of Parliament, besides the Land Tax, &c.

But the Excise-Office may inform any one who sets up a Hop-Garden, of the Duty they are to pay, which is a Trifle, considering what the Profit of every Hop-Garden will be.

F I N I S.

